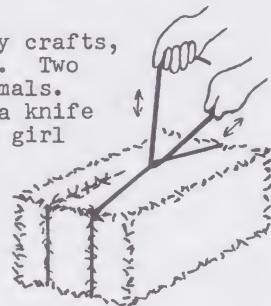


Dwelling Portably

or Shared, Mobile, Improvised
Underground, Hidden, Floating
September 2002 \$1 per issue POB 190-d, Philomath OR 97370

Ways to cut twine when you lack a knife.

At a county fair where I was selling my crafts, I went to the hay storage to look for twine. Two young girls came to fetch hay for their animals. They did not want a whole bail, but lacked a knife to cut the bail's twine. Resourcefully, one girl picked up a loose piece of the same twine, and, using it like a wire saw, she pulled it back and forth across a spot on the bail's twine, severing it in a few seconds. Anna Li, Oregon 973, November



(Addendum:) A way I've used: Find a rock with a sharp edge. (Or, if only rounded rocks, to make a sharp edge, break a rock by hitting it with a bigger rock.) Lay cord over edge and pound it with another rock. Bert

Selecting and lashing poles to build structures.

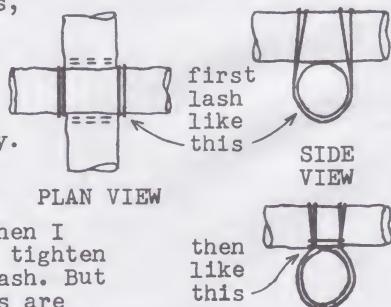
I use small diameter poles, seldom more than four inches thick. Thicker poles are too heavy to handle easily without complex rigs or several helpers. I avoid long unsupported spans that would need thick poles. Eg, with four-inch poles, I want supports not more than seven feet apart.

Because we like sun, and DON'T like to be under big trees that could fall on us, we usually live in areas that have been clear-cut within the past 10 to 20 years, or in rocky areas where trees are stunted. Consequently, poles must be carried from neighboring areas that have older trees - another reason to use light-weight poles. I look for groves, maybe 25 to 40 years old, that include some tall spindly trees which are dying because of shade by bigger trees. I prefer trees that have died within the past year and not yet rotted (sign: some needles hang on but have turned brown), or that will die within the next few years (live foliage only at top, and bigger trees within a few feet). This avoids conflicts with whoever is growing the trees commercially. Also, such trees no longer have branches along most of their height, minimizing trimming.

I prefer conifers (eg, doug-fir, hemlock, spruce, pine, cedar) for durability. However, they exude pitch, so, for inside structures that will stay dry (rot less) and may be touched frequently, I use broad-leaf trees such as maples. For posts that touch or penetrate the ground, I use cedar if I want the structure to last much longer than a year.

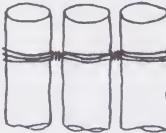
Though removing bark will reduce weight and may increase durability (bark may shelter boring insects), I seldom remove it except from interior wood where flaking bark would annoy. If a tree still has strong branches, I do not immediately cut them off flush with the trunk. Instead, I leave stubs a few inches long which could facilitate fastening or hanging things. Later, I trim off stubs not needed, or in the way.

To lash together two poles that cross each other, I wrap the twine quite a few turns over and under, pulling each turn tight. Then I wrap around those turns to further tighten them. (Some call this a "square" lash. But it will be square only if the poles are



the same diameter and cross at right angles. Better name: parallel lash, because, in plan view, turns are parallel to poles.)

To join poles that must swivel, such as a tripod whose legs come together for carrying, I lash as shown here. (Called a "sheer" lash.)



The poles are usually green or moist and will shrink as they dry.

If the joint must stay tight, I add a tightening wrap of rubber straps (cut from discarded innertubes). Light ruins the rubber in a year or two. If I want longer life, I then wrap the joint with strips of black plastic, quite a few layers, tying frequently as I wrap. Light gradually ruins the plastic, but the inner layers will last many years. (What would endure both light and rot? Cedar bark?)

For twine I usually use synthetic hay cord. We find it discarded where hay has been fed and along rural roads. It does not rot and it endures partial sun for several years. If limited to natural materials, I'd try vines. Some are very strong while alive, but weaken in a year or so. Vines can't take knots. Use several clove hitches?

We've not sought great durability. Though we might return to the same site seasonally for a few years, we'll eventually stop using it because of too much shade if for no other reason.

I dis-recommend nailing. Weak; apt to split poles unless drilled; noisy. (For more about fastening poles, and for calculating diameters needed with various loads and spans, Vonulife 1973 recommended, (DP sells for \$2) esp if building something heavy enough to injure if it collapses. VL is 30 years old, but the techniques probably haven't changed in millenia.) Bert

Five tents tested in windy mountains.

All were advertised as "expedition" models. Three were big, heavy-duty geodesics, weighing 8 to 10½ pounds, capable of sleeping 3 people. The North Face VE-25 and Walrus Eclypse did well; the Moss Olympic failed.

To save weight, some "four-season" tents are designed to flex: yield to the wind and spring back. In 1981 four of us "were holed up in a VE-24 (VE-25 sans vestibule) on Tibet's Xixapangma. Brutal winds crushed the tent and its occupants into the floor with every gust. When winds subsided, tent popped back up. That went on for days."

But the Moss: "A gust of 50 to 55 mph hit. The windward sidewall folded nearly in half; the ridgepole bowed under; then one of the leeward poles snapped in two. Its broken edge punctured the vestibule which then ripped." Not repairable in those strong winds.

Two light-weight (3 pound, two person) tents did well:

The Stephenson Warmlite survives high winds and snow loads by not

resisting. "If you leave the tent alone in a heavy snowfall, it'll just sag in the middle until the load hits the ground. Nothing breaks or rips, it just yields." One drawback of the R2: screened vents small. "With all vents open and one person sleeping inside, on a dry dirt platform in a low-moisture area, condensation was considerable, especially on the single-layer door. I'd hate to be stuck inside on a hot day in mosquito areas." (2SR has screened windows.)

The Chouinard Pyramid achieves lightness by having no rain fly, bug screens, floor. Good as emergency shelter in summer thunderstorms. Four people can squeeze inside. "You won't be comfortable but you won't get wet." The shape isn't roomy "but with most of the surface close to ground, it's very stable in high winds. The beefy, single center pole shivers and sways with the wind, but it doesn't break or let the tent collapse." Eric Perlman (from Backpacker 3/88; sent by

Bruce of BC)

(Comment:) These models may no longer be made, but may show up at yard sales or outdoor-club swap meets. If the Moss is cheap because of its poor rep, it may be a good buy for gentler use.

Further report on a small dome tent.

We bought a Stansport #723 over ten years ago (\$30 on sale). We've used it only during summers - a few months total so far. We protect it from sun either by setting up where shady, or by covering with cloth (or, at one gathering, with cardboard). Between uses, we remove poles and store fabric in a plastic pail. It has so far endured our gentle, infrequent uses. Problems (also see May96, 97, 98 DPs): Scary chemical stink (fire retardant?) dissipated after several years.

Light-color fly (built-in top tarp) admitted some light but was difficult to conceal. We painted it with dark drab green exterior latex housepaint thinned with water. That may also slow sun harm but adds weight.

Leakage, esp near bottom. At first we blamed lack of seam sealing. But applying a sealant (which maker didn't furnish) did not help much. During rains, seepage wets anything that contacts tent. The fabric is fine-weave nylon (not ripstop) and is not coated. Even when no rain, lower sides dampened by condensation. (Inside top stays dry, thanks to insulative space between tent top and fly.) If more than dew or brief drizzle expected, we suspend a 10x12½' piece of clear plastic above (NOT touching) tent (with extra length in front). But that adds to set-up time, and the tie-out cords encumber movement around the tent.

I wonder if all single-wall self-supporting tents have a wet problem. If the built-in fly is small, it does not shield the whole tent. If it is big, extra poles or other complications are needed to support it.

This summer the Stansport has supported, not only itself, but also a heavy, sometimes-wet cotton drape layed over it as sun screen. It hasn't experienced snow load or strong wind.

We like the Stansport better than the Ero (report in May99 DP). Stansport ventilates through a net layer that is part of the door and can be closed by a separate zipper when not wanted, whereas Ero ventilates through a net ceiling that can't be closed.

I don't like either tent's zipper configuration (\cap on Stansport; \sqcup on Ero) because it must be kept zipped to exclude flying insects, requiring an unzip for every access of things outside. I think I'd prefer a \sqcup zipper, so the door will drape closed and need zipping only if there is much wind or many crawling insects. Bert, October

Dome tent versus bug net plus tarp.

Advantages of a small self-supporting dome tent: quicker set up; no tie-out cords to encumber movement around it; somewhat warmer IF vent can be closed; better protection from rain and from crawling insects, esp when windy; blocks view of any prudes.

Advantages of an insect net plus a clear plastic over-tarp: admits more light; less weight; no hard/sharp poles to transport - and replace if they break; easier egress (if no floor); much simpler to fabricate if making it yourself (for how to, see May96 DP). Set-up can be quickened by rigging net and tarp together, but won't be as quick as a good dome tent.

With either, I recommend a plastic ground tarp, to keep tent bottom or mattress cleaner. If tent, the tarp should not extend beyond its sides; or if over-tarp, the ground tarp should end well inboard of its sides (else it will collect rain). Bert & Holly, Jan

How to keep mattresses drier.

If using porous padding such as open-cell foam, leaves, straw, or boughs; put two-thirds of layers under the tent floor but on top of the ground tarp; and only one third tween you and the tent floor. Or, if no floor, use two tarps under you: one on the ground, and one between layers of padding two-thirds of the way up.

This will keep water vapor (from breathing and sweating) from diffusing all the way down through the padding and reaching a temperature near ground cool enough to condense the vapor.

If using closed-cell foam, or open-cell entirely sealed within plastic, condensation may not be a problem. B&H

More reports about plastic tote bins.

A few years ago, I was given four 21-gal Rubbermaid bins. I first used them to store grain. They worked fine.

Last winter, I used one as a water trough for the horses. It worked fine until it got very cold - maybe 20° below. The plastic got brittle and could no longer endure being kicked

and bitten by the colts. I repaired a big crack in the bottom by melting it together with a spoon heated red hot.

When traveling last summer (see Mar 02 DP), I used two bins as panniers (pack baskets) on one of my horses by rigging a sling out of old car seat belts. The bins held folding shovel, axe, horseshoeing tools, etc (hard, heavy objects). They got smashed into trees, and once dropped 3 feet when the horse snagged her saddle on a low tree and broke a cinch. They withstood all that. Bear, ID 832, Jan

Rig for mounting barrels on horses.

A "pivot point" lets barrels hang straight whether going uphill or down; whereas ordinary pack boxes tilt. And on "a deep trail where ordinary boxes would drag", the barrels rock up out of the way. Designed and sold by Ken Wegner of K&S Saddlery in Spinaway WA (s of Tacoma), the rigs are made of nylon seatbelt strapping and brass.

As barrels, Ken suggests Rubbermaid garbage cans. They are "soft" enough that if you run into a tree, they bend and come back out. And if you do destroy one, you just buy another for \$10." Kathy Peth (from Cascade Horseman, May01; sent by Anna)

Choosing a bicycle to carry luggage.

If a bike hauls weight other than its rider, tire cross-section is very important. A tire is a rim protector. It is also a suspension part. Luggage is dead weight; unlike a rider it has no hands or legs to act as springs. At every bump, it pushes down hard. A 125-pound rider with 30 pounds of luggage is harder on a bike than a 200 lb rider with 10 lbs of luggage.

The tire's air pocket is what protects wheels and cushions bumps. So if you carry non-rider weight, get the fattest tire that fits the frame. A tire narrower than 28x1 $\frac{1}{2}$ or 26x1.25 is likely to damage the wheel.

Also important, if using panniers, is length of chainstay - the tube that connects rear axle and pedal crank. Mountain, hybrid and most cyclo-cross bikes are long enough. Most recent road bikes, which are racing designs (even those falsely touted as "sport touring") are too short. 16 $\frac{1}{2}$ " from bottom bracket center to rear axle, is minimum for heels to clear panniers.

Almost all mountain bikes work well for hauling as long as the rider is comfortable with the hand positions that flat handlebars allow. Mtn bikes have rigid frames that won't flex much when carrying extra weight, and rims wide enough for a tire that will support the loaded bike and cushion rider well. (If riding on pavement, non-knobby tires roll easier and quieter than knobbies.) Some racks are made for attaching to shock forks. Mtn bikes with frames 14" or less often need customizing and special hardware to mount a rear rack. As on any bike, threaded holes in the

frame's rear dropouts (where the wheel clamps in) are necessary for rack attachment. (Desirable but not necessary. I've lashed a rack's struts to the chain stays and seat stays with rubber straps. See (eg) May99 DP.)

Hybrid bikes fit 32c to 45c tires that will support weight and absorb shocks. Most hybrids have rack and fender eyelets and some have shock forks. Don't attach front racks to bikes that have rigid aluminum forks.

Most so-called road bikes made since 1990 lack room for tires wider than 700x25c, and have short chain-stays and non-steel forks. Frame strength isn't a problem but wheel strength may be. I wouldn't pack luggage on wheels with less than 32 spokes, esp with a 700x25c tire. David Feldman (from Oregon Cycling, 8/01)

In-line skates for transportation ?

I had hoped that skating would be faster than walking, for mobility in a city to which I ride in a vehicle that can't easily accomodate a bicycle.

I bought a pair at a yard sale for \$10. At thrift stores I bought wrist, elbow and knee protectors: \$3 total. I wore my bike helmet (\$2 at a thrift store previously). To protect my tailbone (and neck - they're connected), I put foam in my underpants. After a few falls I also wore a piece 1½x15x 17" over my butt, outside my clothes, crudely tied to waist and legs.

I'd watched a video, Let's Roll, 5 months before. It was encouraging and covered some basics, but not how to fall - a VITAL skill ! I read 5 books about skating. The best was Inline, William Nealy, 1998, 201p., Menasha Ridge Press, AL (with hilarious cartoons). It had the most about falling. Next best, and more concise: In-line Skater's Start-up, Doug Werner, 1995, 159p., Tracks Pub, Chula Vista CA.

I kept a record. After 24 hours total on skates during several weeks, I don't fall often, esp if not trying anything fancy. But I don't do well on rough surfaces. I tried skating on a typical asphalt highway and could not - my skate would stick and I would have to catch myself from falling forward. Part of the problem: the highway was narrow and busy, confining me to the right edge (in OR the legal side for skaters, who are considered "vehicles" by police). On a surface equally rough but with almost no traffic, I was able to skate with difficulty - because I could zigzag more. I had to exert much force to get any momentum; and I continually feared the skate sticking and tumbling me before I could catch myself.

On smoother streets I was able to skate easier. A patch of ultra-smooth concrete was a dream - I felt graceful. But smooth surfaces are few. (And when I went back to asphalt, it seemed more difficult than before.)

Timing myself on 1/8 mile of fairly smooth asphalt with a slight grade:

both up grade and down, my skating speed was about the same as a brisk walk (6 mph ?) and only a few seconds faster downhill than up. Bicycling quite fast, upgrade was 2½ times faster than walking or skating; downgrade 3 times faster. Walking and bicycling took less energy than skating. I skated 10 minutes while wearing a 10-lb knapsack. No problem. But I don't think I'd feel steady with much more, at my present skill level.

On smooth concrete when wet, I had no control - and doubt anyone would. One book said: when it starts raining, take off your skates. Another said skating was possible.

For now I've given up skates for transportation, but plan to practice more and will report. I hope more-experienced skaters will too. Anna Li

Winter wanderings in a pickup camper.

Two weeks ago I was in Vermont, huddled by the wood-stove as below-zero temperatures froze the garden solid. Now, my daughter and I are in Florida at the Okeechobee Waterway near Ft Myers. On one side is a cattle pasture dotted with cabbage palms and spreading oaks. On the other side is the lock. As we watch, watercraft cue up and go thru: immense barges, yachts, canoes. My daughter has been out there in her 17' sea kayak she built last summer. With her are manatees, otters, an alligator.

We are seldom bored. My daughter has her roller blades and kayak. We swim in pools, keys, and the ocean. We have snorkeling equipment we use in the keys or in (eg) Salt, Alexander and Juniper Springs in Ocala NF. We write in our journals and work on articles. We read things brought from home and trade while on the road. We stop at libraries; sometimes score a temporary card, sometimes borrow one; or just sit and read. (When short of cash, stick your hand between cushions. We often find something.)

We have a 1989 Chevy Cheyenne half-ton truck with a beat-up camper on it. Driving from VT to FL costs about \$150 for gas. We camp free in parking lots of Wal-marts, K-marts, and truck stops.

National Forests now charge for sites that used to be free: \$4 per night; or \$40 for a year's pass. Big Cypress Preserve has free campgrounds.

When we get to an area, to learn of local events, we pick up the free weekly paper, a daily paper, and any interesting tourist info at the chamber of commerce. Often there are discount coupons for attractions. We also converse with folks and learn even more that way: Sometimes we are invited to homes or churches, or told about off-the-beaten-path opportunities. Other snowbirds or full-time RVers are also good info sources.

During summers I grow and sell vegetables in Vermont. The season is short, leaving winters free for travel to warmer places. At home I make fruit

leathers, dry fruits and veggies, and save up garlic, onions, shallots, potatoes, carrots and squash from my garden. We take with us enough food for months. We eat the fresh and heavy stuff first. As we travel we glean just-picked fields, and get food from campgrounds and folks we visit. This campground has all the oranges, grapefruits, kumquats you can pick. Heather has eaten two gallons of kumquats in three days! Don't overlook dumpster diving. We get much perfectly good food that way. Marines practice in our favorite national park, and in two weeks we got over 500 pounds of MRE's (meals ready to eat - canned in plastic/foil pouches) from dumpsters. Check after weekends. We've snagged still-frozen cases of food and cans not opened - left by Boy Scouts. (WHY didn't they take them home? Waste!)

I bought our camper for \$300 years ago. On our first trip to Arizona, we had to rebuild the overhang, which almost broke off enroute. A couple of years later we faced reality and cut most of the overhang, leaving only a foot. The camper is 8 ft long, barely fitting in the truck bed with the tailgate closing up behind it. The tailgate folds down to become our back porch. The camper has a built-in stove/oven and a propane furnace.

We now have staggered bunks, with storage under each. I keep a leather seat cushion on a porta-potty so it doubles as a seat. We sit on that and the lower bed and use a wooden tray table between us for eating and playing cards. Three big cupboards hold food and utensils. Next to the stove is a counter with the dishpan. A 5-gallon water jug sets on the floor. We have totes of clothes, toiletries, candles, medicines and other items. Under the bed is a HUGE food storage container, two ice chests, a pressure clothes washer, and a footlocker of books. Up front, between us on the seat, is a storage organizer containing snacks, wet-naps, maps, and other stuff needed while driving. Heather's kayak goes on the roof and her backpacking tent at the foot of her bed.

Wendy Martin,
VT 056, 2000

(Comments:) Wow. What fabulous food finds! (Holly and I have scored freebies but never such huge amounts.)

Re porta-potties. I might want one if I often entertained guests accustomed to flush toilets. But I've heard a pp can be a nuisance to empty and an expense for chemicals. In the Woods we bury. In a city, if no toilet handy, we wrap well and dispose of as garbage. (No worse than disposable diapers.) May96 DP tells how to defecate simply, almost anywhere. B&H, OR 973, Febr

Wild Child: Girls In Counterculture. (These book excerpts much shortened.) "Our Mail Truck Days." In 1969 my father was arrested for an anti-war protest and sentenced to two years in prison. He had become increasingly

focused on political work, and his arrest meant my mother had no help caring for me. She was furious at him and fury made her feel free.

She met Jim who had embraced the counterculture but not on political terms. They soon made plans to head across the country in Jim's truck. A platform bed stretched across the width of the van, and a hinged half-moon table folded down from the wall and perched on one leg. We ate sitting cross-legged on the mattress. The walls were lined with bookshelves, fitted with bungee cords to hold the volumes in place. On a shelf behind the cab was our kitchen: a two-burner propane stove, a tiny cutting board, and a ten-gallon water jug. Jim covered the metal floors with Persian rugs and hung a few ornaments on the wall. Jim bought a small wood stove and bolted it to the floor near the back wall. The smokestack jutted out the side of the truck, the hole weather-sealed with a tin pie plate. A friend wired in a stereo system, and mother sewed heavy denim curtains that velcroed to the window frames for privacy at night. The engine on those snub-nosed trucks bulged into the cab and was housed by a metal shell. Jim covered it with a piece of thick foam, which would be my bed.

In spring 1970, we packed essential belongings and set out on a year-long journey. Thrills of travel sustained me for a while, but I was a difficult age (4) to be rootless. I played with other kids for a day at a campground or city park; then we drove on. After a day on the road, mother tucked me in on my foam bed, warmed from below by engine heat. Lisa Michaels

"Water Baby". In late May 1970, my parents successfully crossed the Canadian border. They had driven all day, anxious to reach the British Columbia island of Sointula. Mom was 7 months pregnant with me, her first of two children. They were traveling in a GM panel truck, altered with a blowtorch to create plexiglass skylights above where their heads rested on the sleeping platform. Underneath it lay all their possessions.

Sointula was founded by Finnish immigrants in late 1800s who started a commune before communes were cool. Altho their dream faded, it has never been entirely forgotten. Then along came hippies to start a new way of living. They were mostly city folks and had no idea how to relate to the locals or even that they should.

Mom said she didn't know what hard work was until they left the city. Photos usually show her bending over a baby, or dishes, or a row of weeding in the garden. Sometimes she is singing with a band on the front porch.

Mom's parents were excited about the coming birth, but knew nothing of the "home" part. Mom thought it best to spare them anxiety and suggested

they come a week or two after my due date. But, as a well-grounded hippie child, I came when I was ready. Altho I did not arrive in June, my grandparents did. Grandma took one look around the ten-by-ten-foot room (a converted sauna) and KNEW: the eye drops and gauze, the Whole Earth Catalog with birth section earmarked, the Basic Guide For Midwives open on the kitchen table, the piles of fresh linen and buckets for extra water.

Dad delivered me; grandma coached him. When mom's afterbirth didn't come out right away, dad was afraid to push her belly too hard and hurt her. Grandma told him he better, and he did.

Growing up on Sointula was in many ways grand. There were no locked doors and I had the whole forest, beach and ocean for a playground. Zoe Eakle (Though these excerpts are positive, most authors rejected alternative lifestyles. Comments in June 02 DP.)

Editor, Chelsea Cain; Seal Press, Seattle, 1999, \$16 cover price, 186p. 5x7. (Review by Anna Li)

Health advice: 2000 BC to 2000 AD.

2000 BC: Here, eat this herb.

1000 AD: That herb is heathen. Here, say this prayer.

1850 AD: That prayer is superstition. Here, drink this potion.

1950 AD: That potion is ineffective. Here, take this antibiotic.

2000 AD: That antibiotic no longer works. Here, eat this herb.

(from Nutrition Today, 3/01)

Why We Get Sick. (A Darwinian View)

This book explains why our bodies function - or fail. It is especially insightful for portable dwellers who selectively adopt prehistoric ways enhanced with contemporary tools. Though Randolph Nesse MD and George Williams PhD don't offer much HOW-to, they prompt readers to think about WHAT-to and, especially, what NOT-to.

Why do we have seeming "flaws, frailties, makeshifts? Why do we crave the very foods that are bad for us? "Evolution does no sensible planning." It proceeds by slightly modifying what it already has. This results in some trouble-prone arrangements. Eg, in vertebrates, food and air tubes intersect, allowing choking. And optic nerves pass in front of sensors, shading them. (Whereas in squids' eyes, nerves pass behind sensors.)

Because of humans' big brains, fetal heads fit through pelvises only with difficulty. "This explains why human babies have to be born at such an early and vulnerable stage of development, compared to ape babies."

Every major structural change brings problems. "Walking upright enables us to carry food and babies," but because of inadequate adaptations, predisposes us to (eg) back pain, gut blockages, hernias, varicose veins, swollen feet.

"Sitting for hours at a time on chairs or benches in classrooms is unnatural. Nothing of the sort was ever demanded of Stone Age children."

Hunter-gatherers must be able to spot distant edibles and threats. Arctic natives "were seldom nearsighted when first contacted by Europeans. But when their children began attending school, 25% became myopic" - the same percent as among Americans. Why? Eyeball growth is controlled, not by genes alone, but also by neural feedback. If often looking too close to focus, the brain prompts the eyeball to grow longer. To prevent myopia, the authors suggest using very big print in childrens' books. (I doubt that would help much, because books must be held close to turn pages easily. Simpler: wear reading glasses)

Sudden infant death syndrome is up to ten times higher in cultures where babies sleep apart from their parents instead of in the same bed.

In the Stone Age, "you were born into a nomadic band of 40 to 100. It was a stable social group." You knew everyone in the band and their genetic and marital connections. "Some you loved deeply and they loved you in return. If there were some you did not love, at least you knew what to expect from them, and you knew what everyone expected of you. If you occasionally saw strangers, it was probably at a trading site, and you knew what to expect of them too.

"Despite great variation, social systems were constrained by economics and demography... Groups that had to gather their food from within walking distance, remained small. No chief could control enough food, wealth, or people to build pyramids or cathedrals.

"Natural selection clearly favors being kind to close relatives because of their shared genes. It also favors being known to keep promises and not cheat members of one's group or habitual trading partners in other groups. There was, however, never any individual advantage to altruism beyond these local associations. Global human rights is a new idea never favored by evolution during the Stone Age....

"Individuals may be viewed as vessels created by genes for the replication of genes, to be discarded when the genes are through with them.

"Natural selection has no mandate to make people happy, and our long-range interests are often well served by aversions." Eg, nausea and food aversions during pregnancy evolved to impose dietary restrictions on the mother, thereby lessening fetal exposure to toxins when most vulnerable (first few months). The fetus is a minor nutritional burden then, so a healthy woman can afford to eat less. She usually prefers bland foods "without the strong odors and flavors of toxic compounds....

"Women who have no pregnancy nausea are more likely to miscarry or bear

defective children" because they are more apt to eat harmful foods. Unwisely, many doctors attempt to alleviate symptoms. "Pregnant women should be extremely wary of all drugs, both therapeutic and recreational....

"Colds bring many symptoms children dislike: runny nose, headache, fever, malaise. Acetaminophen (eg Tylenol) can reduce or eliminate some of these symptoms." Traditional physicians are likely to recommend it.

"Fever is unpleasant but useful. It is an adaptation shaped by natural selection to fight infections." In one study, children with chicken pox who were given acetaminophen, averaged about a day longer to recover than those who took sugar pills. (More important: did they also incur more complications such as pneumonia?)

Why aren't we normally hotter? "Fever has costs as well as benefits. Even a moderate fever (103°) depletes nutrient reserves 20% faster."

Taking (eg) aspirin for a fever is not ALWAYS bad. "Each condition needs to be studied separately and each case considered individually."

Malaise, too, helps us. By deterring unessential activity, it favors immune defenses and tissue repair.

Distinguishing defenses from defects can be vital. Totally block a cough "and you may die of pneumonia."

By 1970s, iron lack was proven to inhibit infections. "But even now, only 11% of physicians and 6% of pharmacists know that iron supplements may" worsen infections.

"The majority of kidney stones are composed of calcium oxalate." For years, doctors told such patients to reduce calcium intake. However, a study shows that low-calcium diets INCREASE kidney stones. "Calcium binds oxalate in the gut so that it cannot be absorbed." If too little calcium is eaten, some oxalate is left free.

Why such medical ignorance? One cause: "pervasive neglect of evolutionary science at all educational levels," due to religious opposition.

"The body is a bundle of careful compromises. Stronger stomach acid helps digestion and kills bacteria but aggravates ulcers."

Microbes are "sophisticated opponents. We have evolved defenses to counter their threats. They have evolved ways to overcome defenses or even to use them to their benefit."

Pathogens can evolve rapidly, because of their fast reproduction and vast numbers. How they change will depend on conditions. They may not become more benign. "A rhinovirus (cold) that does not stimulate abundant secretion of mucus and sneezing is unlikely to reach new hosts." If more than one Shigella strain is in a host, "the one that most effectively converts the host's resources to its own use will disperse the most progeny before the host dies...."

"If dispersal depends not only on a

host's survival but also on its mobility, any damage to the host is especially harmful to the pathogen. If you are so sick from a cold that you stay home in bed, you are unlikely to come into contact with many people that your virus can infect...."

Fatal diseases lurk in hospitals. "People who are acutely ill, do not move around much, but hospital personnel and equipment move rapidly." Pathogens are spread by inadequately cleaned hands - thermometers, eating utensils. "Diseases may rapidly become more virulent" because the pathogens don't need mobile hosts.

"Mosquito-borne infections are generally mild in the mosquito and severe in the vertebrate. This is to be expected because any harm to the mosquito would make it less likely to bite another vertebrate." But (eg) malaria does not need a mobile vertebrate. In fact, experiments with mice and rabbits show: "a prostrate host is more vulnerable to mosquitos."

In the Stone Age, most ills were caused by worms, and by protozoa born by (eg) bugs. Most bacterial and viral infections require rates of personal contact only possible in dense populations.

Our bodies evolved during millions of years for lives spent in small groups hunting and gathering. "Those conditions ended a few thousand years ago (for most people) but evolution has not had time since then to adapt us to" present conditions.

"Life on a primitive farm or third-world village may be as abnormal" as are offices, classrooms, fast-foods.

"During almost all of human evolution, it was adaptive to conserve energy by being as lazy as circumstances permitted." Energy was a scarce resource and could not be wasted.

This book refers to Timothy John's "With Bitter Herbs They Shall Eat It" (reviewed in May93 DP). "Our dietary problems result from a mismatch between tastes evolved for Stone Age conditions and their likely effects today. Fat, sugar, and salt were in short supply through nearly all of our evolutionary history.... In the Stone Age it was adaptive to pick the sweetest fruit available. What happens when people with this adaptation live in a world full of chocolate eclairs?

"When every household had to make its own wine ... in small vessels and with primitive equipment, it was not likely that anyone would have enough for heavy daily consumption...."

"Paradoxically, the increased food production made possible by herding and agriculture, resulted in nutritional shortages...." About 1500 years ago, some tribes "abandoned hunter-gatherer lifestyles and started growing corn and beans. Compared to earlier skeletons," the farmers are on average less robust and show B-vitamin lack.

"There is great wisdom in our innate tendency to follow the seemingly

arbitrary dictates of culture. The rituals of many societies require that corn be processed with alkali before it is eaten." Though Stone Agers did not know that doing so balanced the amino acids and freed niacin, they or their ancestors observed that eaters of unprocessed corn more often got pellagra. (But many contemporary rituals were crafted by governments/churches/corporations, not to help US but to help THEM. Beware !)

"Nectar is an elaborate cocktail of sugars and dilute poisons." It evolved as an optimal trade-off between the flower's need to repel the wrong visitors and attract the right ones.

"Toxin molecules in sufficiently low concentration will be quickly taken up by receptors" on liver cells and rapidly detoxified by enzymes. "If we overload our body with so many toxic molecules that all processing sites are occupied, the excess circulates through the body, doing damage..."

"There is no such thing as a diet without toxins. The diets of all our ancestors, like those of today, were compromises between costs and benefits.

"Human diets expanded after fire was domesticated" because heat detoxifies many of the most potent poisons.

Artificial pesticides are a special hazard because some "are extremely different chemically from those with which we are adapted to cope.

"Since the invention of agriculture, we have been selectively breeding plants to overcome their evolved defenses. Most wild species of potato are highly toxic, as you might expect, given that they are an otherwise unprotected, concentrated source of nourishment. A new variety of disease-resistant potato was recently introduced that did not need (artificial) pesticide protection; but it had to be withdrawn from the market when it was found to make people ill. Sure enough, the symptoms were caused by the same natural toxins that had been bred out.

"Toxin manufacture (by a plant) requires materials and energy, and the toxins may be dangerous to the plant. In general, a plant can have high toxin levels or rapid growth but not both. Rapidly growing plant tissues are usually better food than stable or slowly growing structures." Spring's first leaves are relished by bugs.

"It takes such elaborate processing to turn acorns into human food that we wonder if the tannin may be too much even for squirrels. (8% kills rats.) Perhaps it leaches out when acorns are buried. If so, the squirrels are processing as well as hiding food.

"The Pomo Indians of CA mixed unprocessed acorn meal with a certain kind of red clay to make bread. The clay bound enough tannin to make the bread palatable. Other groups boiled acorns to extract the tannin. Our enzyme systems can apparently cope with low concentrations of tannin, and many like its taste in tea and wine."

Domestic animals and plants were bred to be tender, non-toxic, easily processed. "The mainstay foods of the Stone Age would seem to us inedible or too demanding of time and effort. Many wild fruits, even when fully ripe, are sour to our tastes, and other plant products are bitter or have strong odors." (I disagree. Many wild berries are as sweet as most domestic fruits, and nettles and some other wild greens are as tasty as garden greens - though not as seductive as candied cherries or pumpkin pie!) Random House, 1994, 289p, \$13 cover price. (review by H&B)

Should I taste unknown green plants ?

Many people, including me, taste leaves or fruits WITHOUT swallowing. I chew a tiny piece and hold in my mouth a minute or so. If it tastes bad or burns/numbs/stings, I spit out and keep spitting. But suppose it tastes bland - or nice. Then what ?

Some people swallow a tiny portion. If no bad effects within 24 hrs, they may eat somewhat more. And so on.

Ray Vizgirdas, in Wilderness Way v5n2, condemns this. He points out that water hemlock (*Cicuta*) smells and tastes good to many people, yet a piece of root "the size of a marble may kill you within a half hour." Some other plants' poisons are cumulative and thus can't be assayed by sampling. And most of the toxins in lupines "are excreted by the kidneys. One must eat a lethal dose at one time to die." Ray advises, eat only plants you've positively identified as edible.

Except for fruits, I agree, partly because most plant parts won't provide enough energy to sustain me if I'm famished. Leaves contain vitamins but few calories (and I'll probably be able to identify before developing a vitamin deficiency). Most roots are tough to dig. Most wild seeds are tiny and difficult to separate out.

However, with an unknown plant, although I don't SWALLOW it, I may TASTE it - to reduce the number of plants I must identify. Most plants taste awful to me. So, tasting saves me much time otherwise spent keying.

As for fruits, in this area at least, the only wild fruits that taste good to me are edible. (I deliberately tasted a baneberry, one of the few poisonous berries, and didn't like it) And fruits are rich in sugars which provide energy, and vitamin C which humans need frequently. Holly & Bert

Water: easy out-flow abets in-flow.

Chronic dehydration (body too dry) is believed to be a major cause of cancer, joint pains, memory and vision loss, over-eating, and lack of pep; perhaps because removal of toxins (which all body tissues produce during normal activities) is slowed.

70% of Americans are chronically dehydrated, I've read. One cause: a weak sense of thirst (which is not felt until 2% dehydrated - I suppose

because dehydration was seldom a problem for primate ancestors who usually got enough moisture from their food: mostly shoots and fruits rich in water, and healthier than often-contaminated streams and ponds). But, in present society, the biggest cause may be: not wanting work, play, or sleep interrupted by trips to toilets.

To minimize inconvenience, keep pee jugs/bowls handy. When inside, I have one within a few feet. Even when we sit a house, I use a pee jug, to save me time as well as saving the owners water and electricity. For men, liquid detergent bottles have good-size openings and are not easily mistaken for water/juice jugs. For women, 64-oz plastic bowls are low enough to squat over and wide enough to reliably intercept flow. Use tight-fitting lid.

Pee frequently. Letting urine set long in you, may harm bladder.

To decide how much to drink, I do not rely on thirst alone. If I feel irritation when I pee, or if I've not had an urge for many hours, or if my pee looks dark, I drink more.

Water is best drunk between meals: at least 2 hours after and 1/4 hour before eating. (If drunk with meals, it dilutes digestive secretions.)

Sweet fruits or drinks may not relieve thirst and might increase it. On one hot 60-mile bike trip, we took scant water, thinking we'd pass some. We didn't. We ate many blackberries, which lessened thirst but did not provide enough moisture. When we did reach water, we drank MUCH (slowly) - but that night I hallucinated.

According to MDs Clark Cobb and Rahul Khosla in 7/01 Patient Care; "During heavy exercise in a hot environment, most people should drink 16 to 32 ounces (2 to 4 glasses) of cool water each hour. Water is just as good if not better than sport drinks. Do not take salt tablets." (If needing salt, will likely crave salty foods.)

Cold, too, increases water needs, because cool air becomes drying when warmed by lungs. High altitude further increases water needs because of more breathing in the thin air. B&H, March

Buying at wholesale grocers.

Though Bert and I sometimes buy (eg) ramen noodles on sale at retail stores, most of our food purchases are at wholesalers. In western Oregon, we have recently payed about 25¢ a pound for oatmeal and popcorn and under 20¢ for red wheat, buying 50-pound bags. Brown rice was over 30¢ and (we've read) is more pesticided than other grains, so we now eat less. Recently, lentils were much cheaper (\pm 30¢/pound) than other beans, and they cook faster, so we bought hundreds of pounds. Prices vary, depending on harvests.

Whereas, if noodles on sale are \$1 for ten 3-ounce packets, that is 53¢ a pound. Not really a bargain. Also, when we get to cities, we are usually too busy to want to chase sales.

A decade ago, we were able to buy 50-pound bags of organic red wheat at a local co-op for under 25¢/pound. But now, the co-op not only marks up more, but no longer stocks extra bags - because they "need" the space for more shelves of (eg) "organic" cookies and candies. (Sad story. They began as a small, simple, funky, volunteer-run shop selling basic foods and some locally-grown produce - but now differ from Safeway mainly in hype. That seems the fate of any organization that grows big enough to need a full-time employee or a professional manager - because one yuppie who buys pricy processed junk, profits them more than do 10 customers like us.) If you want organic grains and local sellers are pricy, consider buying from THEIR source - if your group has enough storage for a truckload.

Most grains we buy are grown elsewhere: eg, popcorn in IA and wheat in MT. People in central U.S. can likely buy for less than we do - esp if they can buy direct from growers. (Weather here is chancy for grains. Some feed-store corn (\pm 10¢/lb) included moldy kernels. A nuisance to pick out.)

Most sizable cities have wholesale grocers. I look for ones (also called institutional grocers) that cater to restaurants, bakeries, schools, etc, because they have the big bags. (Some sell cases of small packages to retail stores - which are not bargains.)

A few wholesalers, pressured by retailers who fear losing trade, say they don't sell "to the public". I ignore that - and briskly walk in like I'm a business person who's been there before, know where I'm going, and do not have much time. (Don't pause and ask.) If questioned, I might say I have (eg) a popcorn stand at the fair, or am a cook at Camp Cukinuki. Seldom am I refused - they want my money. Of course, I pay cash - and carry.

Bert and I together spend \pm \$400 a year for food. (Total expenses \pm \$600 a year; not including DP which costs and earns under \$1000/year.) H & B

Solar pre-cooking can save fuel.

Here and in much of North America, sunshine is often too brief (because of morning clouds, or hills or trees) to rely on solar alone. However, on most summer days and some days year around, water can be heated to 170°F or hotter. That will greatly reduce fuel needed to finish cooking, esp if (eg) rice soaks in the water while it is heating: very worthwhile if using (eg) propane or alcohol that must be bought and backpacked. 170 is also more than hot enough to kill disease organisms in drinking water. (163 is supposedly hot enough, but thermometer might not be accurate.)

Time needed to get water hot can be shortened by keeping the water inside overnight (if your shelter is insulated) or under a pile of leaves or (eg) extra clothes. Bert & Holly, March

Solar cooker easy to pack and store.

This reflector-type cooker is esp for portable dwellers at mid latitudes (most of N.Amer). Its main advantage over similar designs: folds to $8\frac{1}{2} \times 11"$: small enough to fit into a 5 gal pail: important where its materials will rot or lose shine unless sheltered.

Covered with 12-inch-wide aluminum foil (standard size); little scrap. Accommodates pot up to 10" diameter.

I built ours out of non-corrugated cardboard from recycle bins. (Stiff pieces best.) Hinges and reinforcements of Tyvek, a super-strong paper (from used "Express Mail" envelopes). White glue. About $6\frac{1}{2}$ feet of foil. Total cost under 25¢. Tools: pencil, ruler, sizzors, knife, clean flat surface at least $2\frac{1}{4} \times 3$ feet.

The cooker consists of eight $8\frac{1}{2} \times 11$ panels hinged together. (If bigger sheets available, less gluing needed.)

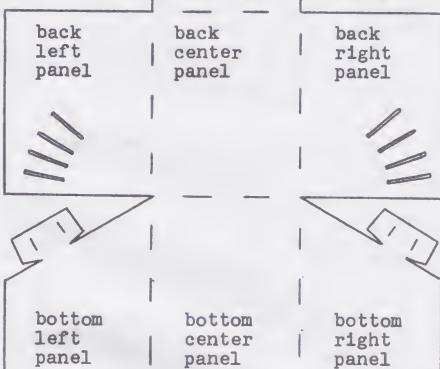
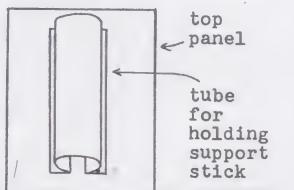
CONSTRUCTION. (Read through to "use" before starting.) Cut bottom side panels as shown on right, leaving tabs. Cut slots in back side panels. I reinforced tabs and slots and fold lines by gluing Tyvek onto cardboard. For best adhesion, apply glue to blank sides (if one side has printing).

Cut a Tyvek piece 7×9 ", fold into a Ω shape 9" long with "feet" 1" wide and glue to (what will be) non-reflective side of top panel.

Cut foil slightly larger than the cardboard.

(Eg, $9\frac{1}{2} \times 12"$ to cover an $8\frac{1}{2} \times 11$ panel)

On top of the LEAST shiny side of the foil, put a panel (or multi-



KEY

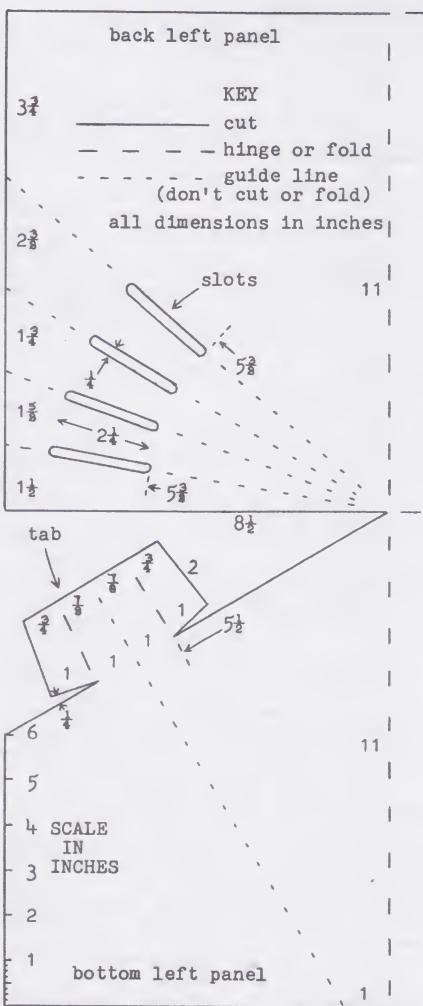
- cut
- - hinge or fold

11

$8\frac{1}{2}$

that would otherwise be covered by Tyvek (so the Tyvek will glue to the cardboard, not the foil). Don't put glue on the hinge/fold lines.

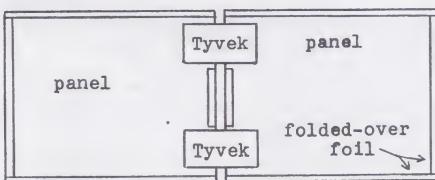
Though not essential, a 2×3 -foot piece of flat material (eg, plywood), to be a platform the cooker sets on, will facilitate turning the cooker (because the cooker and the props that adjust it can all set on the platform and turn with it).



panel section), centering so the foil extends about $\frac{1}{2}$ " beyond all edges. (Except: I trimmed off foil that would cover tabs.) Fold foil up over the edges of the panel. (I did not glue foil to cardboard. I did sticky-tape to non-reflective sides in a few spots to help hold.)

Place panels, reflective sides down, about $\frac{1}{4}$ " apart (to allow fold-up room). To hinge panels together, cut 18 pieces of Tyvek about $2 \times 4"$ (2 for each $8\frac{1}{2}$ " join; 3 for each 11 " join). Before gluing on, trim off folded-over foil

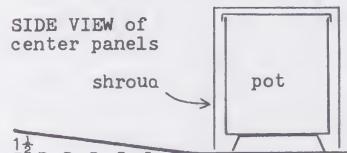
that would otherwise be covered by Tyvek (so the Tyvek will glue to the cardboard, not the foil). Don't put glue on the hinge/fold lines.



FRONT VIEW of bottom panels
at mid day



SIDE VIEW of center panels



pie plate. I blackened can and lid in a fire. (Black adhered to can, not lid)

I adjusted cooker once an hour but left tabs in third slots all day. At 1:30 (sun highest), I set center back panel steeper, top panel less steep, front panel horizontal or below.

During all tests the water got hot enough long enough to cook almost anything. (I didn't cook because can had soldered (lead?) seam, and because the tests were too long.)

The last test, Sept 8, got hottest despite lower sun, because sky had no clouds. Strong breeze in early PM. At 9:00, when sun rose above trees, test began: air 55°F, water 49°. 11:30, 162°. 12:00, 177° (now steaming). 12:30, 187°. 1:30 (local solar noon), 202°, air 87°. 3:00, 208° (hottest). 6:00, 195°, air 66°, sun going behind trees, test end. A cup of water evaporated. Its cooling effect prevented boiling. (A pressure cooker would have gotten hotter.)

On Sept 2, when sky mostly/partly cloudy until 3:30, water 170° at 2:00, max 197° at 4:00. 185° or hotter for 3 hours. (Plenty hot enough to cook - typical simmer 182° on a gas stove.)

COMPARISON. A decade ago, we built a window-box-type cooker out of cardboard, insulated with crumpled newspaper. We cooked with it almost every day during July and early Aug. We had no candy thermometer to measure temperatures. As I recall, it got steamy hot though not audibly boiling. It needed adjusting less often than does our reflector cooker, and had few parts to adjust. But it required a high sun (or else tilting the whole box, which would complicate pot support). Biggest problem: VERY BULKY - much too big to fit in any container we had. Sheltered only by wrapping in plastic, moisture and mice ruined it in one winter.

COMMENTS. Some may wonder why we want to solar cook, living as we do where wood is plentiful. Solar is safer: no chance of starting forest fire or of producing smoke (which can cause alarm and attract hassles, even from a safe wood stove). Also, with solar, less chance of scorching food. Also, we might be able to cook inside, where we definitely don't want smoke!

A garden hose can provide hot water.

When laying in sunshine, it's the fastest, cheapest, hottest solar water heater I've seen. Robert, TX 798, Jan

(Comments:) A hose will heat faster than gallon jugs. But discarded jugs are free and widely available. And, with a reflector and clear shroud (eg, May93 DP), a jug will get hotter. And jugs weigh less, per water capacity.

However, for heating MUCH water gradually, a LONG hose, fed from a source above, is more convenient than jugs. (Eg, for washing many clothes by hand.) Black will heat fastest and hottest. Black half-inch plastic pipe may be more durable than hose (and cheaper and lighter ?), but won't roll up as compact for transport. If the first water out is too hot, store it in pails or tubs and dilute it with cooler water coming later.

I would not use water that has set in a hose, for food. (One time I started to drink from a hose - and quick spit out. Tasted like rubber !)

Sun-creams, glass, ozone inadequate.

Sun exposure has long been linked to NON-melanoma skin cancers. They occur most often on nose, ears, neck; highly exposed skin. 700,000 new U.S. cases per year result in 2000 deaths.

Melanoma is rarer but deadlier. 30,000 new cases per year cause 7000 deaths. Linkage to sun uncertain; melanoma often appears on trunk or legs - skin not highly exposed.

Experimenters at Brookhaven Lab found that blocking ultraviolet rays between 280 and 320 nm (UV-B) did not prevent melanoma in fish. They suspect longer ultraviolet and visible light which passed through glass aquarium. Ozone absorbs much only at 320 nm and shorter. So do most commercial sun creams. (CD Perspective, 3/94)

I read elsewhere, melanoma has greatly increased recently per age (ie, not due to more old folks), but not among regular outdoor workers. That has prompted some researchers to suspect erratic exposure - being inside on work days and outside only on weekends. I am skeptical because, in most places, sunshine is erratic - so no one gets regular exposure. So, the main cause could be most anything. Eg: less sleep; poorer diets; laundering with detergents (more toxic than soap). Also, the surgical fad during early/middle 1900s of removing "useless" organs such as tonsils, adenoid, thymus - organs later found to be important parts of immune system !

Complexion fads have flipflopped: from no sun prior to industrialization when most people worked outside and few but the rich could be pale; to much sun in the 1900s when most people worked inside and few but the rich could winter on tropical beaches; and back to no sun as research found that heavy exposure harms skin. But, to assume that vitamin D pills adequately

replace sunlight, may be as risky as assuming that vitamin C pills adequately replace fruit.

Present policy of this average-complexioned Euro-Am. During summer and late spring: Shade face, neck, shoulders, upper back, breast tops (parts often over-exposed) as much as feasible; covering with cloth or a broad hat if not under foliage. Uncover other parts only while upright, so that sun's angle reduces intensity. I LAY in sun only during winter and late fall; an hour or longer if sun weak. If too chilly to be nude, I expose top half one time; bottom half another. I always move to shade before becoming noticeably pink or irritated.

Bert and I have not discovered any hot-weather shade-wear that does well when moving through brush in areas lacking overhead foliage (such as recent clear-cuts). We've tried broad hats (uncomfortable; head gets hot; catches on bushes; blows off unless chin strapped which adds to discomfort) and short capes (don't shade nose or breasts; catch on bushes). What have you used ? Holly, Oregon 973, March

Peroxide halts tooth/gum infection.

A few years ago, a big filling came out of a lower molar. Holly saw decay in the hole. Root canal or removal needed. I should go to Tijuana.

But we weren't able to get there (and local dentists are impossible). I chewed on the other side and tried to keep the tooth clean.

A year or two passed. The tooth began hurting and, in autumn 2000, abcesses formed in gum beside tooth. Prolonged sucking on area relieved hurt and sometimes shrunk abcesses, but they didn't go away.

I began rinsing with 3% (ordinary) hydrogen peroxide. After each floss/brushing, at least once a day, I poured a few drops into the bottle's cap (easy to pour too much, but easy to pour excess back into bottle), and dumped it into/onto the bad tooth and gum area. Then, after a few seconds, I moved the peroxide (now getting diluted with saliva) around my mouth and swished it back and forth between all teeth by moving tongue. I spit out, sipped water, swished that around to rinse, and spit again. I continued to suck on the tooth/gum area often.

In a few months the abcesses went away and the tooth stopped hurting (except when accidentally chewed on).

I continued the peroxide rinses until recently when, after reading that steady use was harmful (but did not say why !) I began alternating weekly with saturated salt water.

I don't know peroxide's long-term effects, so I'm not recommending, but it apparently disinfected my mouth.

Recently we found a temp filling kit (given us a few years ago, which we'd forgot about); eugenol and zinc oxide. We'll try it, and report. Bert